

What is claimed is:

1. A dryer system for a refrigeration unit, comprising:

an enclosure;

a passive port mounted within said enclosure; and

an air dryer apparatus,

wherein said air drying apparatus is coupled to said port for drying all incoming air.

2. The system of claim 1, wherein said port is a pressure equalization port.

3. The system of claim 1, wherein said dryer apparatus comprises a desiccant canister.

4. The system of claim 3, wherein said canister is replaceable.

5. The system of claim 4, wherein said canister comprises one of a group consisting of silica-gel, activated carbon and other hygroscopic media.

6. The system of claim 1, wherein said dryer apparatus comprises a porous polymer membrane for allowing gaseous air to pass through.

7. The system of claim 6, wherein said membrane is impermeable to water vapor in ambient air.

8. The system of claim 1, wherein said dryer apparatus comprises:

a plurality of dryers connected in parallel;

a plurality of heaters in communication with said dryers;

a humidity sensor; and

a controller in communication with said heaters and said sensor.

9. The system of claim 8, wherein said humidity sensor is disposed downstream of said dryers and upstream of said port.

10. The system of claim 9, wherein said heaters are wrapped around said dryers.

11. The system of claim 10, wherein incoming air flows through one of a plurality of said dryers by way of a conduit connecting said dryers to said port.

12. The system of claim 11, wherein said conduit comprises a compressor valve in communication with an

orifice which is in communication with at least one solenoid valve proximal said dryers.

13. The system of claim 12, wherein said controller is configured to alternatively switch the air flow path to the port via the at least one solenoid valve in the conduit based on a moisture content of each dryer.

14. The system of claim 13, wherein said humidity sensor determines said moisture content which activates the alternative switch of air flow from one dryer to another.

15. The system of claim 14, wherein upon the alternative switch, the controller activates the corresponding heater for regenerating the dryer from a moisture laden state to a dry state.

16. A method of drying incoming air to a refrigeration unit enclosure, comprising the steps of:

providing a dryer apparatus in communication with a passive port mounted within the enclosure;

preventing water vapor from entering the enclosure; and

allowing gaseous air to pass through said dryer

apparatus and to enter the enclosure.

17. The method of claim 16, wherein said dryer apparatus comprises a desiccant canister.

18. The method of claim 16, wherein said dryer apparatus comprises a porous polymer membrane for allowing gaseous air to pass and is impermeable to water vapor in ambient air.

19. The method of claim 16, wherein said dryer apparatus comprises:

    a plurality of dryers connected in parallel;

    a plurality of heaters in communication with said dryers;

    a humidity sensor; and

    a controller in communication with said heaters and said sensor.

20. A dryer system for a refrigeration unit, comprising:

    means for allowing gaseous air to pass through a dryer apparatus and to enter an enclosure; and

    means for preventing water vapor from entering the enclosure.